CLAIMS

Claim 1-5 **(Cancel)**

6. **(Currently Amended)** A method for selectively separating components having a molecular weight below a threshold value from a multi-component fluidic sample, said method comprising:

introducing said multi-component fluidic sample into a micro-fluidic device having a fluid flow path and at least one micro-valve comprising a phase reversible gel material having a first porosity that can be modulated in response to an applied stimulus to provide a second porosity; and

contacting said introduced multi-component fluidic sample with said micro-valve under conditions sufficient for said components of said multi-component fluidic sample having a molecular weight below said threshold value to at least move into said micro-valve while the remaining components of said multi-component fluidic sample having molecular weights above said threshold level are excluded from entering said micro-valve and thereby remain outside of said micro-valve;

wherein said method comprises modulating the porosity of said micro-valve by applying said stimulus to said gel having said first porosity to provide said gel with said second porosity that selectively allows sample components that have a molecular weight below said threshold value to at least move into said micro-valve while excluding entry into said micro-valve of sample components having molecular weights above said threshold value ~~components having a molecular weight below a threshold value are selectively separated from said multi-component fluidic sample~~.

7. **(Original)** The method according to Claim 6, wherein said phase reversible material is a phase reversible polymer.

8. **(Original)** The method according to Claim 6, wherein said phase reversible material is thermo-reversible.